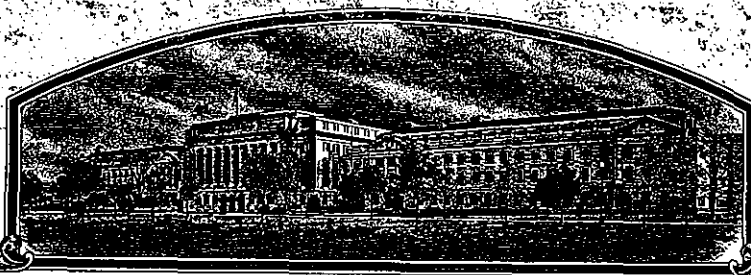


No.

200700007



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

The U.S. Government as Represented by the
Secretary of Agriculture

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC DEPOSITMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE APPLICANT(S) SHALL EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED IN THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COWPEA

'GreenPack-DG'



In Testimony Whereof, I have hereunto set my hand
and caused the seal of the Plant Variety
Protection Office to be affixed at the City of
Washington, D.C. this twentieth day of
September, in the year two thousand and seven.

Attest:

Alm J. [Signature]

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

[Signature]
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

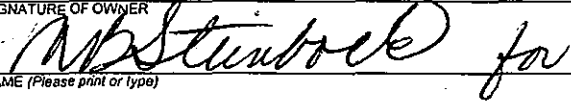
Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER The U.S. Government as Represented by the Secretary of Agriculture		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME UIS-1096	3. VARIETY NAME GREENPACK-DG GreenPack=NC 10/06 LML
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 1400 Independence Ave., SW Washington, D.C. 20250 USA		5. TELEPHONE (include area code) (301) 504-6905	FOR OFFICIAL USE ONLY PVPO NUMBER 200700007 FILING DATE OCTOBER 18, 2006
		6. FAX (include area code) (301) 504-5060	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) U.S. Government	8. IF INCORPORATED, GIVE STATE OF INCORPORATION N/A	9. DATE OF INCORPORATION N/A	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Richard L. Fery, Research Leader U.S. Vegetable Laboratory 2700 Savannah Hwy Charleston, SC 29414 Richard J. Brenner USDA, ARS, OTT 5601 Sunnyside Ave. Beltsville, MD 20705-5131			F E E S R E C E I V E D FILING AND EXAMINATION FEES: \$ 4,382.00 DATE 10/18/06 CERTIFICATION FEE: \$ 768.00 DATE 8/7/07
11. TELEPHONE (include area code) (843) 402-5300	12. FAX (include area code) (843) 573-4751	13. E-MAIL RLBrenner@ars.usda.gov	
14. CROP KIND (Common Name) Cowpea	16. FAMILY NAME (Botanical) Leguminosae	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
15. GENUS AND SPECIES NAME OF CROP Vigna unguiculata	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (if "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (if "no", go to item 23)	
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input checked="" type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)			

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER 		SIGNATURE OF OWNER	
NAME (Please print or type) Richard J. Brenner		NAME (Please print or type)	
CAPACITY OR TITLE Assistant Administrator	DATE Oct. 12, 2006	CAPACITY OR TITLE	DATE

(See reverse for instructions and information collection burden statement)

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

Plant Variety Protection Office
Telephone: (301) 504-5518 FAX: (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

200700007

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, Seed Regulatory and Testing Branch, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
(1) identify these varieties and state all differences objectively;
(2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Exhibit A: Origin and Breeding History of the Variety

'GreenPack-DG' is the product of a pedigree-type breeding program initiated in 1997. The parental lines are 'Charleston Greenpack' (Fery, 1998) and USVL 97-296. 'Charleston Greenpack' is a pinkeye-type southernpea that is homozygous for the *gc* gene (Fery and Dukes, 1994) conditioning the green cotyledon trait; it was developed using a backcross-pedigree breeding procedure (one backcross) involving 'Kiawah' (a pinkeye-type cultivar with cream-colored cotyledons) as the recurrent parent and 'Bettergreen' (a cream-type cultivar with green-colored cotyledons) as the donor parent [Fery and Dukes, 1988; Fery et al., 1993]. USVL 97-296 is a pinkeye-type breeding line that is homozygous for the *gt* gene (Chambliss, 1974) conditioning the green testa trait; it is an F10 population derived from a cross between 'Kiawah' and Au 84-G-328 (a green testa, pinkeye-type breeding line developed by researchers at Auburn University). After the cross between 'Charleston Greenpack' and USVL 97-296, intense selection pressure was applied in the F2 through the F8 generations for the green cotyledon trait, the green testa trait, plant habit (low bushy), concentration of pod set (concentrated), earliness (days to harvest), pod placement (above foliage), pod shape (straight to slightly curved), pod length (long), color of immature pod (green), fresh-shell stage pod color (dark purple), pod fill (minimal seed abortion), seed shape (kidney), seed coat pattern (pink eye and green seed testa), texture of dry seed testa (smooth), seed size (medium, similar to 'Charleston Greenpack'), seed germination, hardness of seed coat (dry seed must imbibe water readily), and seed yield. 'GreenPack-DG' was carefully observed through three years of replicated yield testing (5 replicated tests) and one year breeder's seed multiplication activities (3 separate seed multiplication plantings); 'GreenPack-DG' is uniform for all traits as described in Exhibit C (Objective Description of Variety). Four generations of 'GreenPack-DG' were observed for evidence of uniformity and stability; 'GreenPack-DG' showed no variants other than what would normally be expected due to environment.

Chambliss, O. L. 1974. Green seedcoat: A mutant in southernpea of value to the processing industry. HortScience 9:126.

Fery, R. L. 1998. 'Charleston Greenpack', a pinkeye-type southernpea with a green cotyledon phenotype. HortScience 33:907-908.

Fery, R. L., and P. D. Dukes. 1988. 'Kiawah' southernpea. HortScience 23:645-646.

Fery, R. L., and P. D. Dukes. 1994. Genetic analysis of the green cotyledon trait in southernpea [*Vigna unguiculata* (L.) Walp.]. J. Amer. Soc. Hort. Sci. 119:1054-1056.

Fery, R. L., P. D. Dukes, and F. P. Maguire. 1993. 'Bettergreen' southernpea 28:856. 1993.

Exhibit B: Statement of Distinctness

'GreenPack-DG' is a pinkeye-type southernpea. It most closely resembles 'Charleston Greenpack', a leading pinkeye-type cultivar grown in the United States for processing by the frozen food industry. 'GreenPack-DG' differs from 'Charleston Greenpack' in being homozygous for both the green cotyledon gene (*gc*) and the green testa gene (*gt*), whereas 'Charleston Greenpack' is only homozygous for the green cotyledon gene (*gc*). No other pinkeye-type southernpea cultivar is homozygous for both the green cotyledon gene (*gc*) and the green testa gene (*gt*). Dry 'GreenPack-DG' seeds have a richer and more uniform green seed color (rich olive green) than dry seeds of green cotyledon phenotype cultivars, and the seeds are much less susceptible to color loss due to blanching when harvesting is delayed. The major attribute of the new cultivar is the persistence of the green color of unharvested dry peas long after optimal harvest. Unlike the green cotyledon phenotype parent 'Charleston Greenpack' where growers must harvest the crop immediately after pod drying to insure a high-color product, growers of 'GreenPack-DG' have a considerably greater harvest window. Color loss is a critical problem in production systems where pre-harvest chemical desiccants are used to facilitate mechanical harvesting operations. The 7-day delay between application of the desiccant and initiation of harvesting operations can result in serious color degradation.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.66 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Cowpea (Vigna unguiculata L.(Walp.))

NAME OF APPLICANT (S) Agricultural Research Service U.S. Dept of Agriculture	TEMPORARY OR EXPERIMENTAL DESIGNATION US-1096	VARIETY NAME GreenPack-DG
ADDRESS (Street and No. or RD No., City, State, and Zip Code, Country) 1400 Independence Ave., SW Washington, D.C. 20250-0302		FOR OFFICIAL USE ONLY PVPO NUMBER 200700007

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal characters typical of this variety in the spaces below.

Place a zero in the first box (e.g. or) when number is either 99 or less or 9 or less.

1. PLANT HABIT AT GREEN SHELL STAGE:

1 = Erect 2 = Semierect 3 = Procumbent
4 = Prostrate

2. PLANT SIZE:

cm High at Maturity

3. STEM COLOR:

1 = Green 2 = Purple

4. NODE COLOR: (Main stem)

1 = Green 2 = Purple

5. FOLIAGE:

1 = Open 2 = Compact

6. LEAF COLOR:

1 = Light Green 2 = Medium Green 3 = Dark Green

7. LEAF SURFACE:

1 = Smooth 2 = Blistered

1 = Dull 2 = Glossy

8. FLOWER COLOR:

1 = Purple 2 = Lavender 3 = Tinged 4 = White

9. FIRST FLOWERING:

Number of Days

10. POD:

Placement: 1 = Below Foliage 2 = Above Foliage
3 = At Foliage Level

Location: 1 = Scattered 2 = Bunched

cm Long

mm Wide

Curvature 1 = Straight 2 = Curved

Constrictions: 1 = None 2 = Slight 3 = Deep

Surface (Green shell maturity) 1 = Dull 2 = Glossy

Color (Green Shell Maturity): 1 = Silver-green 2 = Green 3 = Light Purple 4 = Dark Purple

Color (Dry maturity): 1 = White 2 = Straw 3 = Drab 4 = Purple

Cross Section (Green Shell Stage Width/Height): 1 = (1: <) 2 = (1: >) 3 = (1:1)

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11. SEED:

 Number of Seeds Per Pod

Shape (see Page 3)

 = Kidney
 = Globose

 = Ovate to Ovoid
 = Rhomboid
 = Crowder

200700007

 mm Long

 mm Wide

 Hilar Eye Type:

1=



2=



3=



4=



5=



6=


 gm per 1000 Seeds

SPECKLED

BLOTCH

NARROW

BIG

SMALL

VERY SMALL

 Coat: 1 = Wrinkled
 2 = Smooth

 Color Pattern: 1 = Single Color 2 = Patterned 3 = Marbled 4 = Speckled

 Primary Color (Single Color or Basic Color): 1 = Purple 2 = Black 3 = Dull Black 4 = Blue 5 = Red
 6 = Coffed 7 = Maroon 8 = Buff or Clay 9 = Pink 10 = White 11 = Green

SECONDARY COLORS PRODUCING THE PATTERN, MARBLING OR SPECKLING (Enter a zero in boxes where the colors do not identify the secondary colors.):

 1 = Purple 2 = Black 3 = Dull Black 4 = Blue 5 = Red
 6 = Coffee 7 = Maroon 8 = Buff 9 = Pink 10 = White

12. DISEASE RESISTANCE (0 = Untested; 1 = Susceptible; 2 = Resistant):

<input type="text" value="0"/> Vusarium Wilt	<input type="text" value="1"/> Root Knot Nematode	<input type="text" value="0"/> Charcoal Rot	<input type="text" value="0"/> Zonate Leaf Spot
<input type="text" value="0"/> Red Leaf Spot	<input type="text" value="0"/> Powdery Mildew	<input type="text" value="0"/> Cowpea Chlorotic Mottle Virus	<input type="text" value="0"/> Southern Bean Mosaic Virus
<input type="text" value="0"/> Bean Yellow Mosaic Virus	<input type="text" value="0"/> Cucumber Mosaic Virus	<input type="text" value="0"/> Bean Pod Mottle Virus	<input type="text" value="0"/> Soybean Cyst Nematode
<input type="text" value="0"/> Cowpea Yellow Mosaic Virus	<input type="text" value="0"/> Bacterial Canker	<input type="text" value="0"/> Cercospora Leaf Spot	<input type="text" value="0"/> Sting Nematode
<input type="text" value="0"/> Rust	<input type="text" value="0"/> Southern Blight	<input type="text" value="0"/> Root Rot	<input type="text" value="2"/> Other (Specify) <u>Blackeye Cowpea Mosaic Virus</u>

13. INSECT:

<input type="text" value="0"/> Mexican Bean Beetle	<input type="text" value="0"/> Cowpea Aphid	<input type="text" value="0"/> Cowpea Curculio	<input type="text" value="0"/> Stink Bugs
<input type="text" value="0"/> Lesser Cornstalk Borer	<input type="text" value="0"/> European Cornborer	<input type="text" value="0"/> Corn Earworm	<input type="text" value="0"/> Beet Armyworm
<input type="text" value="0"/> Thrips	<input type="text" value="0"/> Serpentine Leaf Miners	<input type="text" value="0"/> Other (Specify) _____	

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLE THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant size	Charleston GreenPack	Plant habit	Charleston GreenPack
Pod size	Charleston GreenPack	Plant pigmentation	Charleston GreenPack
No. days to maturity	Charleston GreenPack	Seed coloration	Charleston GreenPack

Instructions

GENERAL: The following publications may be used as a reference aid for completing this form:

1. C. V. Piper, 1912, *Agricultural Varieties of Cowpea and Related Species*, U.S.D.A., Bulletin No. 229.
2. L. L. Ligon, 1958, *Characteristics of Cowpea Varieties*, Oklahoma State University, Bulletin B-518.
3. W. J. Spillman and W. J. Sando, 1929, *Mendelian Factors in the Cowpea*, papers of the Michigan Academy of Science Arts and Letters, Vol XI.

6

LEAF COLOR: Any recognized color chart may be used to determine the leaf color of the described variety. The following cowpea varieties may be used as a guide to identify colors listed:

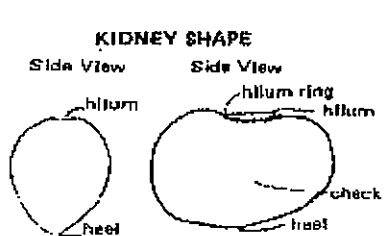
1. Light Green – Texas Cream 40
2. Medium Green – Big Boy
3. Dark Green – California Blackeye #5.

FLOWER COLOR: White flower should be treated with a one percent solution of hydrochloric acid to determine if anthocyanin is present. If color appears as a result of the test, classify as tinged.

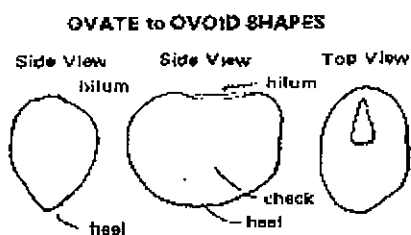
TERMS USED TO DESCRIBE SHAPES:

200700007

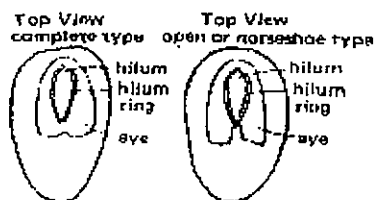
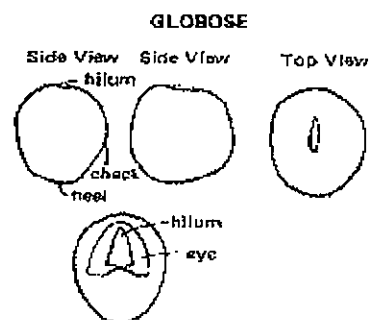
KIDNEY SHAPE



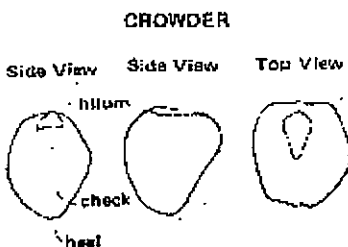
OVATE to OVOID SHAPES



GLUBOSE



CROWDER



RHOMBOID

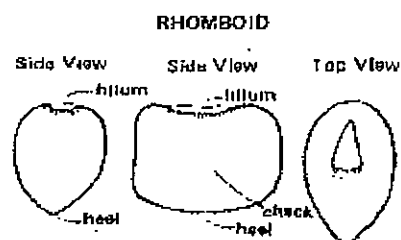


Exhibit D: Additional Description of the Variety

'GreenPack-DG' is the first pinkeye-type southernpea to be released that has a persistent green seed phenotype conditioned by both the green cotyledon gene and the green testa (seed coat) gene. Dry 'GreenPack-DG' seeds have a richer and more uniform green seed color than dry seeds of green cotyledon phenotype cultivars, and the seeds are much less susceptible to color loss due to blanching when harvesting is delayed.

Except for longer pods and slightly smaller seeds, 'GreenPack-DG' is similar in appearance to 'Charleston Greenpack' (Attachment 1 to Exhibit D; Attachment 2 to Exhibit D). It matures to the dry-pod harvest stage at Charleston, SC, in about 63 to 65 days (similar to 'Charleston Greenpack'). The plant habit is low bushy. The leaf color is a dark green; the leaf surface is smooth and glossy. There is slight pigmentation (purple) on the stems; the petioles exhibit moderate pigmentation at the tips; the branches exhibit extensive pigmentation; and the pigmentation on the peduncles range from intermediate at the early pod stage to extensive at the dry pod stage. Flower color is predominately white; the upper, inside margin of the standard is lightly pigmented (violet), the base of the standard is yellow, and the wing is lightly pigmented (violet) on the back surface with a tinge of pigment (violet) on the front surface.

'GreenPack-DG' pod set is concentrated, and the pods are borne above the foliage in a scattered fashion. Dry pods are attached to the peduncles in a pendant manner, and each peduncle typically produces two pods. A typical fresh-shell stage pod is slightly curved, long (20 centimeters), exhibits only slight constrictions between peas, and contains 12 peas. Pod color is green when immature, dark purple when ready for mature-green harvest, and dark straw or drab when completely dry. The upper sutures and tips of immature pods are pigmented.

'GreenPack-DG' fresh peas are kidney shaped and have a pink eye, quite similar to fresh 'Charleston Greenpack' peas. The dry peas have a smooth coat, and are slightly smaller than those of 'Charleston Greenpack' (13.8 vs. 14.3 grams/100 peas, respectively). Results of three years of replicated field tests at Charleston, SC, indicate that 'GreenPack-DG' yields are comparable to 'Charleston Greenpack' yields.

'GreenPack-DG' was grown "on-farm" in South Carolina, New Mexico, and California during 2004-2005 by Western Seed Multiplication, Inc., Wadmalaw Island, SC. The purpose of these plantings was to multiply seed, to evaluate field performance, to arrange for evaluation of the suitability of the harvested products for commercial processing, and to test for field resistance to blackeye cowpea mosaic virus (BICMV). 'GreenPack-DG' performed as expected in these plantings. The harvested product produced a frozen product with excellent characteristics, and the results of inoculated field plantings indicate that the new cultivar has excellent field resistance to BICMV. 'GreenPack-DG', like 'Charleston Greenpack', does not produce hard seeds that are troublesome to frozen food processors.

'GreenPack-DG' is recommended for trial by the frozen food industry. The seed shape, seed size, and seed eye pattern traits of the new cultivar are quite similar to those of 'Charleston Greenpack'; seeds of the two cultivars can readily be blended (packed together) to produce a retail product with the desired intensity of green color.

Attachment 1 to Exhibit D

Table 1. Number of days to harvest, weight per 100 dry peas, and dry pea yield for 'Charleston Greenpack', 'Coronet', and 'GreenPack-DG' pinkeye-type southernpeas grown in five separate trials at Charleston, S.C., 2003-2005².

Trial/ Cultivar	Days to harvest (no.)	Wt./100 dry peas (g)	Dry pea yield (kg·ha ⁻¹)
Trial I			
Coronet	72.6 a ^y	14.6 a	1,529 a
Charleston Greenpack	66.0 b	13.1 b	1,095 b
GreenPack-DG	64.8 b	13.2 b	1,093 b
Trial II			
Coronet	62.7 a	14.2 a	1,346 a
Charleston Greenpack	61.3 a	13.6 a	1,140 ab
GreenPack-DG	63.0 a	13.6 a	963 b
Trial III			
Coronet	65.0 a	15.1 a	1,049 a
Charleston Greenpack	65.0 a	14.7 a	842 ab
GreenPack-DG	65.3 a	14.9 a	644 b
Trial IV			
Coronet	65.3 a	13.5 a	890 a
Charleston Greenpack	61.0 b	14.0 a	791 a
GreenPack-DG	63.0 ab	13.4 a	724 a
Trial V			
Coronet	65.9 b	14.9 a	670 a
Charleston Greenpack	68.4 a	15.2 a	645 a
GreenPack-DG	63.2 c	14.0 b	598 a
Combined analysis of all trials			
Coronet	66.0 a ^{**}	14.5 a ^{**}	1,032 a ^{NS}
Charleston Greenpack	64.8 b	14.3 a	872 b
GreenPack-DG	63.8 b	13.8 b	781 c

²'Coronet' is a traditional pinkeye-type cultivar, 'Charleston Greenpack' is a pinkeye-type cultivar with a green cotyledon phenotype, and 'GreenPack-DG' is pinkeye-type cultivar with both the green cotyledon and green testa phenotypes. Trials I-V planted on 12 June 2003, 21 May 2004, 14 June 2004, 23 June 2004, and 26 May 2005, respectively. Experimental design of each trial was a randomized complete block with 6 replications (Trials I-IV) or 10 replications (2005).

^yMean separation within columns and trials by Student-Newman-Keuls multiple range test, $P \leq 0.05$.

^{NS, **}Nonsignificant or significant interaction between cultivar and trial at $P \leq 0.01$, respectively.

Attachment 2 to Exhibit D

Table 2. Fresh pod length for 'Charleston Greenpack', 'Coronet', and 'GreenPack-DG' pinkeye-type southernpeas grown in two separate trials at Charleston, S.C., 2004 and 2005^z.

Cultivar	Fresh pod length (cm)		
	2004 Trial	2005 Trial	Combined analysis of both trials
Coronet	16.3 b ^y	14.8 c	15.4 c ^{NS}
Charleston Greenpack	16.5 b	16.0 b	16.2 b
GreenPack-DG	20.3 a	19.3 a	19.6 a

^z'Coronet' is a traditional pinkeye-type cultivar, 'Charleston Greenpack' is a pinkeye-type cultivar with a green cotyledon phenotype, and 'GreenPack-DG' is pinkeye-type cultivar with both the green cotyledon and green testa phenotypes. The 2004 trial was planted on 23 June 2004; the 2005 trial was planted on 26 May 2005. Experimental design of each trial was a randomized complete block with 6 replications (2004) or 10 replications (2005).

^yMean separation within columns by Student-Newman-Keuls multiple range test, $P \leq 0.05$.

^{NS}Nonsignificant interaction between cultivar and trial at $P \leq 0.05$.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE**EXHIBIT E**
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) US Govt as Represented by the Secretary of Agriculture	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER US-1096	3. VARIETY NAME GreenPack-DG
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 1400 Independence Ave., SW Washington, D.C. 20250	5. TELEPHONE (Include area code) (301) 504-6905	6. FAX (Include area code) (301) 504-5060
7. PVPO NUMBER 200700007		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain.

☒

YES

☐

NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country.

☒

YES

☐

NO

10. Is the applicant the original owner?

☒

YES

☐NO If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐

YES

☐

NO If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐

YES

☐

NO If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

N/A

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT F
DECLARATION REGARDING DEPOSIT

NAME OF OWNER (S) US Government as Represented by the Secretary of Agriculture	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 1400 Independence Ave., SW Washington, D.C. 20250	TEMPORARY OR EXPERIMENTAL DESIGNATION US-1096
NAME OF OWNER REPRESENTATIVE (S) Richard L. Fery, Supervisory Research Geneticist	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) U.S. Vegetable Laboratory 2700 Savannah Highway Charleston, SC 29414	VARIETY NAME GreenPack-DG <div style="background-color: #cccccc; padding: 2px;">FOR OFFICIAL USE ONLY</div> PVPO NUMBER 2007000007

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Richard L. Fery
Signature

10/13/2006
Date